



# UNITED STATES PATENT AND TRADEMARK OFFICE

AT

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,150	10/08/2003	Roger Lin	VIAP0074USA	5067
27765	7590	01/13/2005	EXAMINER	
(NAIPC) NORTH AMERICA INTERNATIONAL PATENT OFFICE			LUU, AN T	
P.O. BOX 506			ART UNIT	
MERRIFIELD, VA 22116			PAPER NUMBER	
			2816	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/680,150

**Applicant(s)**

LIN, ROGER

**Examiner**

An T. Luu

**Art Unit**

2816

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, the limitation “generating multi-phase reference clocks having the same frequency higher than an output clock frequency”, lines 3-4, does not have a clear meaning since “multi-phase reference clocks” and “an output clock frequency” appear to represent the same entity. Further, phrase “*the same frequency higher than*” is not understood since “*same*” and “*higher than*” have mutual exclusive meaning. The limitations “*the reference clocks*”, line 5, “*the corresponding reference periods*”, line 8, and “*the reference clock*”, line 9, lack antecedent basis. The limitation “*generating output clocks wherein periods of each output clocks are triggered by the corresponding reference periods apart from other reference*”, lines 7-8, does not have a clear meaning since “*clock*” by itself has its own “*period*”. Lastly, functions of “*generating multi-phase reference clocks*” and “*generating output clocks*” appear to be unrelated since there is no structural or operational characteristics relationship between the above two “*generating*” functions.

In claim 2, the limitation “*the reference clocks*” does not have a clear antecedent basis. It is treated as “*the multi-phase reference clocks*”

Art Unit: 2816

In claim 3, the limitation “the reference phase difference”, line 1, lacks antecedent basis.

The limitation “*the ratio of the reference phase difference is the same as the reference clocks and the output clocks*”, lines 2-3, is not understood since “*the ratio of the reference phase difference*” lacks antecedent basis and there is no definition of a second value to make “*ratio*” meaningful.

The above limitation is understood as “*the ratio of the reference phase difference with respect to something is the same as that of the reference clocks and the output clocks*”.

In claim 4, the limitations “*the corresponding output clocks*” and “*the plurality of references periods*”, lines 2-4, lack antecedent basis.

In claim 6, the limitation “*the two reference clocks*”, line 1, lacks antecedent basis. Further, limitation “*a second reference period in the second reference clock*” does not have a clear antecedent basis since there is no “*a first reference period in the second reference clock*”.

In claim 7, the limitation “the reference phase difference”, line 2, lacks antecedent basis.

In claim 8, the limitation “*the reference periods*”, line 2, lacks antecedent basis. Further, the limitation “*period of an output clock is triggered*”, recited in various places of claim, has similar problem as presented in claim 1.

In claim 9, the limitation “*the two reference clocks*”, line 1, lacks antecedent basis and the limitation “*the reference period*”, line 4, does not have a clear antecedent basis.

In claim 10, the limitation “*a clock generator for generating two reference clocks having the same frequency higher than and a multiple of the frequency of a corresponding output*”, lines 4-6, has the same problem as that of claim 1. Further, it is unclear which entity “*the same frequency higher than*” limitation compares to. In addition, the limitation “*a phase interpolator for generating two corresponding output clocks wherein each period of these two output clocks*”

Art Unit: 2816

*is triggered by the corresponding reference period, which is apart from other reference periods by at least one or a plurality of periods of the reference clock*", lines 8-10, does not make any meaningful sense since "*the corresponding reference period*" lacks antecedent basis. Lastly, claim 10 also has the same problems as pointed in claim 1 regarding antecedent basis.

In claim 11, the limitations "*the reference period*", line 4, and "*the corresponding intermediate clock*", line 8, lack antecedent basis.

In claim 12, the limitation "the reference phase difference", line 2, lacks antecedent basis.

In claim 13, it has similar problem as that of claim 6 as noted above.

In claim 14, it is unclear which signal is referred to in triggering by "*rising edges*".

In claim 16, it has the same problem as that of claim 3 as noted above. Further, the limitation "*the output phase difference*", line 2, lacks antecedent basis.

In claim 17, it has the same problem as that of claim 1 as noted above.

In claims 18-19, the limitation "*the output clocks*" does not have a clear meaning. It is understood for referring to "*the two output clocks*" recited in claim 17.

In claim 20, the limitation "*the output clock*", line 2, lacks antecedent basis and the limitation "*the output clocks*", line 2, has the same problem as noted in claims 18 and 19 as noted above.

In claim 21, the limitation "*the frequency division*", line 1, lacks antecedent basis.

In claim 22, the limitation "output clock", lines 1-2 is treated as "*the third output clock*". Further, the limitation "*triggering each period of the third output clock according to each period of the second reference clock*" appears to be a non-issue to the method of phase splitting since the operation of the above limitation does not affect the whole operation at all.

The above are but a few specific examples of indefinite and functional or operational language used throughout this claim, and are only intended to illustrate the extensive revision required to overcome the rejection under 35USC 112, second paragraph. The above-mentioned corrections therefore, are in no way a complete and thorough listing of every indefinite and functional or operational language used throughout this claim. Applicant is required to revise all of the claims completely, and not just correct the indefinite and functional or operational languages mentioned.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented, or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 10 and 17, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by the Scott et al reference (U.S. Patent 6,369,661).

Scott et al discloses in figures 6 and 7 an apparatus for generating two output clocks (out1+ and out1-) of the same frequency with a predetermined phase difference between each other comprising a clock generator 608 for generating two reference clocks (out1+ and out1-) having the same frequency and being higher than the input clock 609 of the clock generator, the two reference clocks having a predetermined reference phase difference between each other (i.e., differential); and a phase interpolator 610 for generating two corresponding output clocks (output of 612) as required by claim 10.

Art Unit: 2816

Claim 10 and 17 are rejected for reciting method/steps derived from the apparatus of claim 10 that is rejected as noted above.

Given the great arrangement of confusion and uncertainty as to the proper interpretation of the limitations of claims, it would not be proper to reject claims 2-9,11-16 and 18-22 on the basis of prior art given at this point of prosecution. MPEP 2173.06 states:

“...where there is a great deal of confusion and uncertainty as to the proper interpretation of the limitations of a claim, it would not be proper to reject such a claim on the basis of prior art. As stated in *In re Steele*, 305 F.2d 859, 134 USPQ 292 (CCPA 1962), a rejection under 35 USC 103 should not be based on considerable speculation about the meaning of terms employed in a claim or assumptions that must be made as to the scope of the claims.”

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to An T. Luu whose telephone number is 571-272-1746. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2816

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

An T. Luu  
1-7-05 *ATZ*

  
TIMOTHY P. CALLAHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800